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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,323	03/06/2002	Steven M. Zink	02SW049	9035

7590 10/31/2007
Susan M. Donahue
Rockwell Automation, 704-P,IP Department
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Milwaukee, WI 53204

EXAMINER

TRUONG, LAN DAI T

ART UNIT	PAPER NUMBER
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2152

MAIL DATE	DELIVERY MODE
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10/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/092,323

Applicant(s)

ZINK ET AL.

Examiner

Lan-Dai Thi Truong

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-19, 21, 22, 24-28, 31 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-19, 21-22, 24-28, 31, 33-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. This action is response to communications: filed 03/06/2002; amendment filed 08/01/2007. Claims 1-7, 9-19, 21-22, 24-28, 31, 33-39 are pending; claims 1, 21, 31, 33 are amended; claims 8, 20, 23, 32, 29-30 are canceled

Response to arguments

2. Applicant's arguments filed 08/01/2007 have been fully considered, but new scopes of amended claims are moot in view of the new ground(s) of rejection.

3. In response to applicant's cancellation for claim 32 the previous 35 U.S.C. 101 rejection is withdrawn;

4. In response to applicant's amendments to claims 1 and 33 the previous 35 USC § 112 rejection is withdrawn

5. In response to applicant's argument with respect to the combination of the Crater et al. (6,201,996) and the Patel (U.S. 6,889,257) fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ...the handle information as a constant numeric reference in order to mitigate to overall amount of data to be transmitted when compared to lengthy and variable length explicit tag references...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

6. In response to applicant's argument that to the combination of the Crater et al. (6,201,996) and the Patel (U.S. 6,889,257) fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ...the handle information as a constant numeric reference to generate an update data packet to update data locations in the industrial controller) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Regarding to applicant's arguments with respect to the cited references do not disclose claimed feature of "receiving handle information from the industrial controller relating to the selected data items" are not persuasive; Crater clearly discloses remote computer receiving "display procedures" those share functionality with "selected data items" as claimed from the controller

8. In response to applicant's argument that to the combination of the Crater et al. (6,201,996) and the Patel (U.S. 6,889,257) fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (a component associated with the entity remote from the industrial controller receives handle information from the industrial controller relating to the selected data items and employed the handle information as a constant numeric reference to generate an update data packet into update data locations in the industrial controller) are not recited in the rejected claim(s), specially the emphasized phase. Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim rejections-35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1-7, 9-19, 21-22, 24-28, 31, and 33-39

(AC)

9. Claims ~~1, 21, 31 and 33~~ are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

10. Claims 1, 21, 31, 33 cited, "constant numeric reference" which is not support by the original specification

Specification

The specification is objected to under 37 CFR 1.75(d)(1). See the rejection under 35 USC 112 first paragraph.

(AC)

11. ~~The amendment filed 08/01/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall~~

~~introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "a constant numeric reference"~~

~~Applicant is required to cancel the new matter in the reply to this Office Action.~~

Claim rejections-35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 9-12, 14, 18-19, 33-39 are rejected under 35 U.S.C 103(a) as being unpatentable over Crater et al. (U.S. 6,201,996) in view of Horn et al. (U.S. 2003/0004585) in view of Husted et al. (U.S. 5,845,149)

Regarding claim 1:

Carter discloses the invention substantially as claimed, including a system, which can be implemented in a computer hardware or software code for industrial controller, comprising:

A primary aggregation component associated with an industrial controller defined and installed at the industrial controller by an entity remote from the controller: (Carter discloses the association between an industrial controller and it's control function (which shares functionality with a primary aggregation component as claimed). The industrial controller can be a visual presentation/template in form of a webpage containing numbers of instructions/procedures those

accessible by remote viewer through monitor computer. The remote user can access and influence control function of industrial controller by modifying control parameters/procedure instructions those displayed through the visual presentation/template: column 3, lines 62-65; column 4, lines 6-8, 40-67; column 10, lines 30-53; column 11, lines 58-60; column 12, lines 5-10)

the primary aggregation component aggregates one or more selected data items into an aggregated subset of data items: (Carter's control function aggregates one or more procedures/instructions (which shares functionality with data items as claimed) into an action (which shares functionality with an aggregated subset of data items as claimed): column 4, lines 50-60)

a component associated with the entity remote from the industrial controller receives handle information from the industrial controller relating to the selected data items and employed the handle information to generate an update data packet into update data locations in the industrial controller: (Carter discloses the industrial controller also allows the remote client computer not only to access "procedures/instructions/parameters" (which shares functionality with "handle information" as claimed) those contained in the visual presentation/template but also to modify/update the procedures/instructions/parameters. At least one component/program should be included in the remote client computer embeds for interactive communication processes between the industrial controller and the remote client computer: column 10, lines 7-52; column 11, lines 28-67; column 12, lines 1-9; column 5, lines 52-67)

a communications component associated with the entity remote from the controller, the communications component transmits the subset of data items via a singular communications

packet across a network: (Carter clearly teaches interactive communications between the remote client computer and the industrial controller through Web pages therefrom the remote client computer can access and modify procedures/instructions/parameters. Although Carter does not explicitly disclose a communications component, however it would have been obvious to a one of ordinary skill in the art to know that the remote client computer should includes a communication in order to be able to execute communication process with the industrial controller: column 3, lines 62-65; column 4, lines 6-8, 40-67; column 10, lines 30-53; column 11, lines 58-60; column 12, lines 5-10)

employing handle information as a constant numeric reference: (Carter discloses technique of associating procedure instructions with “storage locations/pointer” those represent functionality of “constant numeric reference” as claimed: column 11, lines 55-67; column 14, lines 1-9)

However, Carter does not explicitly disclose adding at least one aggregation component at the industrial based upon at least of increased network protocols considerations

In similar art, Husted discloses numbers of I/O modules represents numbers of industrial controller’s functions. When addition point/connection is added at the interface, “a new I/O module” which carries functionality of “aggregation component” as claimed also be added. Although Husted does not explicitly disclose network protocol in his system, however it would have been obvious to one of ordinary skill in the art to know that any network connection should be embedded at least one protocol type, see (column 1, lines 43-54; figure 5)

However, Carter- Horn does not explicitly disclose adding at least one aggregation component at the industrial based upon at least of increased data demands

In analogous art, Horn discloses industrial controller has scaling ability. The industrial controller scaling/expanding function is implemented in response to increasing of “object types” those are interpreted as “data demands/ protocols” as claimed, see ([0008]; [0042]; [0012]; [0014]-[0016]; [0020]; [0026])

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate Husted’s ideas of adding I/O modules in response to receiving additional connections and Horn’s ideas of scaling/expanding control function in response to increasing of object types into Carter’s system in order to production of such scalable controllers, see (Horn: [0016])

Regarding claim 33:

This claim is rejected under rationale of claim 1

Regarding claim 11:

Crater-Horn-Husted discloses a method as discuss in claim 1, which further includes object including association classes: (Crater: column 11, lines 1-15)

Regarding claim 12:

This claim is rejected under rationale of claim 11

Regarding claim 34:

Crater-Horn-Husted discloses a method as discuss in claim 33, which further includes memory: (Crater discloses “database” which shares functionality with “memory” as claimed used for storing objects: figure 3, item 315)

Regarding claims 35 and 39:

Those claims are rejected under rationale of claim 33

Regarding claim 2:

In addition to rejection in claim 1, Crater-Horn-Husted further discloses client application that can select and request subsets of data items from the controller: (Carter discloses the remote computer can retrieve, monitor, supervise, and modifies control parameters of action procedures/ of control structures: abstract; column 3, lines 58-67; column 4, lines 45-67; column 9, lines 60-67; column 10, lines 7-52; column 11, lines 28-67; column 12, lines 1-9; column 5, lines 52-67)

Regarding claim 3:

In addition to rejection in claim 2, Crater-Horn-Husted further discloses Human and Machine Interface: (Crater disclose webpage used for interacting between designers/engineers and the object-oriented programmer industrial controller; it would have been obvious in the art to know that at least one interface program/software included in Crater's system for supporting communications between the remote computer and the object-oriented programmer industrial controller: column 7, lines 1-67; column 8, lines 40-45; column 5, lines 14-67; column 6, lines 1-41, 50-67)

Regarding claim 4:

In addition to rejection in claim 2, Crater-Horn-Husted further discloses a communication server: (Crater's system includes a server: column 6, lines 25-45)

Regarding claim 36:

In addition to rejection in claim 34, Crater-Horn-Husted further discloses the network is at least one of an Ethernet, ControlNet, a DeviceNet, RS-232, RS-422, RS-485: (Crater's system implements for "industrial controlling" which shares functionality with either controlNet or DeviceNet as claimed: abstract)

Regarding claim 10

In addition to rejection in claim 1, Crater-Horn-Husted further discloses dynamically increasing and decreasing the amount of selected data items in the primary aggregating component based upon data demands received from the network: (Patel also discloses method for determining system conditions of the server in order to modifying/adjusting packets aggregating process of transmitting the data packets to the client computer; it would have been obvious in the art to know that it needs at least one addition aggregation component based upon increased data demands in order to reduce numbers of lost packets while transmitting over the network; see (abstract; column 2, lines 35-67, 40-44; column 4, lines 34-67; column 5, lines 1-31)

Regarding claim 9:

In addition to rejection in claim 1, Crater-Horn-Husted further discloses removing the one or more secondary aggregation component: (Patel discloses method for determining system conditions of the server in order to be able to modifying/adjusting packets aggregating process of transmitting the data packets to the client computer; it would have been obvious in the art to know that it needs at least one addition aggregation component according to increasing data in transmitting network; and vice versa ; it would have been obvious in the art to know that Patel's aggregation system also can be able to remove the one or more secondary aggregation component based upon decreased data demands for save memory purpose; see (abstract; column 2, lines 35-67, 40-44; column 4, lines 34-67; column 5, lines 1-31)

Regarding claims 18-19:

Those claims are rejected under rationale of claim 9

Regarding claim 14:

In addition to rejection in claim 11, Crater-Horn-Husted further discloses services include at least one of Get All Attributes, Get All List, Set Attribute List, Reset, Start, Stop, Create Object and delete Object: (Patel disclose method for creating Object: column 1, lines 25-32)

Regarding claim 37:

Crater-Horn-Husted discloses a method as discuss in claim 35, which further includes the communication driver: (Crater discloses “network interface/ or machine interface” those share functionality with “communication driver”: figure 2, items 215, 210; figure 3, item 300)

Regarding claim 38:

Crater-Horn-Husted discloses a method as discuss in claim 35, which further includes HMI: (Crater: column 19, line 27)

Claims 5-7, 13, 15-17 are rejected under 35 U.S.C 103(a) as being un-patentable over Crater-Horn-Husted in view of Bhatt et al. (U.S. 6,097,399)

Regarding claim 5:

Crater-Horn-Husted discloses the invention substantially as disclosed in claim 1, but does not explicitly teach sending request to the industrial controller relating to the subset of data items

In analogous art, Bhatt discloses aggregating device receives plurality of selected data in order to produce an aggregated data: (column 5, lines 11-14; column 6, lines 1-17)

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Bhatt’s ideas of producing an aggregated data from received selecting data items with Crater-Horn-Husted’s system in order to speed up transmitting time, see (Bhatt: column 4, lines 45-55)

Regarding claims 6-7:

In addition to rejection in claim 5, Crater-Horn-Husted -Bhatt further discloses step of including tag and value information associated with tag in to response, the tag and value information relating to the subset of data items; employing the tag and value information to build the primary aggregation component from the response: (Bhatt discloses aggregating device receives plurality of selected data in order to produce “an aggregated data” which shares functionality with “object” as claimed; it would have been obvious in the art the well-know knowledge of including tag information in data header: column 5, lines 11-14; column 6, lines 1-17)

Regarding claim 13:

Crater-Horn-Husted discloses the invention substantially as disclosed in claim 11, but does not explicitly teach setting for at least one of object update times, event triggers, whether to update the object based on rate, demand and other criteria, wherein a data stream triggers are located, whether to continue on an over flow, number of driers currently installed, timestamp information, size of buffers, start times, and object lifetime settings

In analogous art, Bhatt discloses “intervals” which shares functionality with “object lifetime setting” for aggregating data items to produce an aggregated data: (column 5, lines 11-14; column 6, lines 1-17)

Regarding claims 15-17:

Those claims are rejected under rationale of claim 11

Claims 21-22, 24 and 31 are rejected under 35 U.S.C 103(a) as being un-patentable over Crater et al. (U.S. 6,201,996) in view of Bhatt et al. (U.S. 6,097,399) and further in view of Wang et al. (U.S. 6,970,921)

Regarding claim 21:

Crater discloses the invention substantially as claimed, including a method, which can be implemented in a computer hardware or software code for industrial controller comprising:

Receiving the handle information from the industrial controller relating the selecting data items; employing the handle information to generate an update packet to update data locations in the industrial controller; updating object data on the controller; receiving data from the object that has been updated by the controller: (Carter discloses communications between the object-oriented programmer industrial controller and the remote computer through a web page; wherein the remote computer can retrieve, monitor, supervise, and “modifies” which shares functionality with “updated” as claimed control parameters of action procedures/ of control structures of the object-oriented programmer industrial controller: abstract; column 3, lines 58-67; column 4, lines 45-67; column 9, lines 60-67; column 10, lines 7-52; column 11, lines 28-67; column 12, lines 1-9; column 5, lines 52-67);

employing handle information as a constant numeric reference: (Carter discloses technique of associating procedure instructions with “storage locations/pointer” those represent functionality of “constant numeric reference” as claimed: column 11, lines 55-67; column 14, lines 1-9)

However, Crater does not explicitly disclose step of requesting tag information from a controller; adding data items of interesting to object

In analogous art, Bhatt discloses aggregating device receives plurality of selected data in order to produce “an aggregated data” which shares functionality with “object” as claimed; Although Crater does not explicitly disclose tag information; however it would have been obvious in the art the well-know knowledge of including tag information in data header: (column 5, lines 11-14; column 6, lines 1-17)

However, Crater- Bhatt does not explicitly teach arranging data items according to at least one of contiguous and non-contiguous address memory locations

Wang discloses method of arranged data packets in contiguous and non-contiguous space in memory: (abstract, lines 1-20)

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate Bhatt’s ideas of aggregating device receives plurality of selected data in order to produce an aggregated data and Wang’s ideas of storing transmitting data in contiguous and non-contiguous buffers into Crater’s system in order to maximize packets transmitting rate and reduce data packet lost, see (Bhatt: column 4, lines 5-12)

Regarding claim 31:

This claim is rejected under rationale of claim 21. Examiner interprets the “constructing an optimized data packet” which is equivalent to “building an object” of claim 21; “refreshing the optimized data packet” is equivalent to “updating object data” of claim 21

Regarding claim 22

In addition to rejection in claim 21, Crater-Bhatt-Wang further discloses Internet connection: (Crater: column 4, lines 65-67; column 5)

Regarding claim 24:

In addition to rejection in claim 21, Crater-Bhatt-Wang further discloses updating Object via at least one of periodic occurrence, an event driven occurrence, and a request: (Crater discloses an authorization person request to modify control parameters: column 10, lines 34-53)

Claims 25-26 are rejected under 35 U.S.C 103(a) as being un-patentable over Crater-Bhatt-Wang in view of Patel (U.S. 6,889,257)

Regarding claims 25-26:

Crater-Bhatt-Wang discloses the invention substantially as disclosed in claim 21, but does not explicitly teach method for removing object

In analogous art, Patel discloses method for determining system conditions of the server in order to be able to modifying/adjusting packets aggregating process of transmitting the data packets to the client computer; it would have been obvious in the art to know that it needs at least one addition aggregation component based upon decreased data demands; vice versa; it would have been obvious in the art to know that Patel's aggregation system also can be able to remove the one or more secondary aggregation component based upon decreased data demands for save memory purpose; see (abstract; column 2, lines 35-67, 40-44; column 4, lines 34-67; column 5, lines 1-31)

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Patel's ideas of aggregating packets into aggregated packet prior transmitting them into a network with Crater-Bhatt-Wang's system in order to be able to reduce packets lost and bandwidth utilizing, see (Patel: column 8, lines 1-14)

Claims 27-28 are rejected under 35 U.S.C 103(a) as being un-patentable over Crater-Bhatt-Wang in view of McCoskey et al. (U.S. 2003/0028889)

Regarding claim 27:

Crater-Bhatt-Wang discloses the invention substantially as disclosed in claim 21, but does not explicitly teach placing data into scanning list

In analogous art, McCoskey discloses method of placing suggestion data in a scan list:
[0094]

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine McCoskey's ideas of placing suggestion data in a scan list with Crater-Bhatt-Wang's system in order to employ a well-know standard for saving resources and development time

Regarding claim 28:

This claim is rejected under rationale of claim 24

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "System and methodology providing Optimized data exchange with industrial controller": 6223224; 6542930; 6553268; 20020099465; 5963448; 20020046397; 20030004585; 5713036; 5689415; 6553268; 20030023616; 5713036; 5689415

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Conclusions

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan-Dai Thi Truong whose telephone number is 571-272-7959. The examiner can normally be reached on Monday- Friday from 8:30am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob A. Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/26/2007

A handwritten signature in black ink, appearing to read "Andrew Caldwell". The signature is fluid and cursive, with the first name "Andrew" and last name "Caldwell" clearly distinguishable.

ANDREW CALDWELL
SUPERVISORY PATENT EXAMINER